PRELIMINARY AND SHORT REPORT

CONTAMINATION OF FUNGUS CULTURES BY *TYROPHAGUS LINTNERI** †

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Contamination of plate cultures of fungi by airborne bacteria and molds is not an unusual occurrence in the average mycology laboratory. However, as pointed out by Reiss and Caroline (1), infestation by arachnids is rare, or at least, has not been reported in the American literature.

For the purpose of supplementing the literature and adding a new arachnid contaminant, the following experience in our laboratory is submitted.

During the hot weather of the past summer an overnight infestation of the mite, *Tyrophagus lintneri*,* (Plate 1) appeared on stock culture plates of *Trichophyton rubrum* and *Microsporum audouini*. The infestation first appeared as small white specks moving on the surface of the agar. Microscopic examination through the glass revealed the arachnid and several eggs. Within a few days there was grossly visible infestation of all the plates of the superficial fungi in the immediate area.

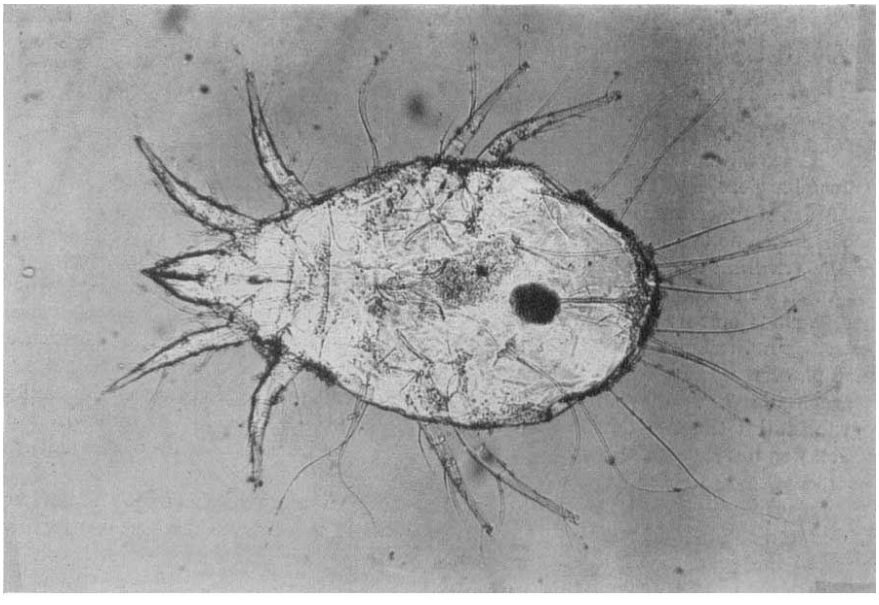

PLATE #1. Ventral view of *Tyrophagus lintneri* showing spores on body, legs and setae

Following the initial infestation exhaustive search for the source of the mites furnished no clue as to their origin. The area adjacent to the mycology laboratory had been the scene of previous studies with *Pyemotes ventricosus*, *Bdellonyssus bacoti* and *Eutrombicula alfred-*

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† This mite was identified by Dr. Edward Baker, Agricultural Research Administration, Division of Insect Detection and Identification, Washington, D. C.

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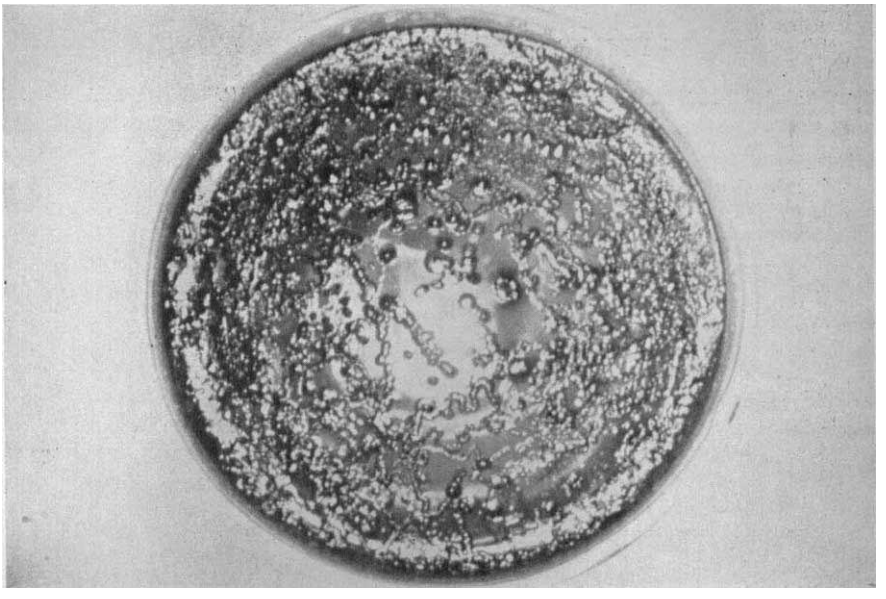

PLATE #2. Geometric pattern of newly developing fungus colonies

dugesi. These mites had been constantly maintained within a small area by mineral oil and repellent barriers, and the entire area fumigated and sterilized several months before the appearance of the new mite. All materials newly introduced to the laboratory were minutely examined with no evidence of past or present mite infestation presenting. It was concluded that the arachnid must have entered the laboratory as an airborne contaminant.

In an effort to determine if either mites or fungi might influence the growth of one another, various cultures were inoculated with mites. In general there was no deleterious effect on growth of either the animal or vegetable organisms. After the fungus cultures attained maturity, there was moderate consumption of the aerial portion of the cultures by the arachnids. The only cultures among the various superficial, intermediate and deep fungi to inhibit the proliferation of the mites were those of the *Candida* species. This inhibition was but short-lived as it disappeared after the initial moisture of the culture disappeared.

The mites were then planted on common rapidly growing non-pathogens and afterward transplanted to fresh agar plates. Such plates demonstrated the excursions of the mites by the linear and geometric arrangement of newly developing colonies (Plate 2).

During these superficial studies it was found that merely keeping the plates on a support surrounded by mineral oil in a draft-free enclosure provided satisfactory isolation with no further contamination.

SUMMARY

1. An instance of infestation of several cultures by the mite, *Tyrophagus lintneri*, is reported.
2. The origin of the mites could not be determined.
3. No deleterious effect of mites upon the fungi nor the reverse could be demonstrated.
4. The migration of the arachnids could easily be controlled by mineral oil barriers.

REFERENCE

1. REISS, F. AND CAROLINE, L.: Tarsonemus confusus, Contaminant of Fungus Cultures, A. M. A. Arch. Derm. and Syph., **68:** 728, 1953.